

Determination Of Use Status Of Supplements In Individuals Who Do Sports

Zehra Kuru¹, Mehmet Akman²

Abstract

The aim of the research is to determine the prevalence of nutritional support products in individuals who are actively engaged in sports, the purpose of use of the products and the individuals who recommend the products. The study was conducted out on the internet with a total of 468 individuals, including 119 female and 349 male, aged 18-65 years. According to the study, 40,0% of the participants use supplements. The most commonly used supplements are protein/amino acid powders, vitamin/multivitamin/mineral and protein/energy bars; respectively. There were statistically significant results between gender, education level, sporting time, sporting frequency and sports branches and use of supplements ($p<0,05$). Unconscious and uncontrolled use of supplements are quite high. Necessary training should be given in this regard and the coach, dietitian and physician should work in cooperation for the health of athletes. Supervisory activities for the sale and use of nutritional supplements should be increased.

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¹ Physical Therapy and Rehabilitation Center Kastamonu, Turkey, zehraakur@hotmail.com, Orcid: 0000-0003-4697-0793

² Corresponding author, Beykent University, School of Health Sciences, Nutrition and Dietetics Department, İstanbul, Turkey, mehmetakman@beykent.edu.tr, Orcid: 0000-0001-9995-4426



Introduction

Live an active life and a healthy diet; It provides many benefits for physical health, mental health and general well-being. In addition, doing sports is entering the lives of more and more people every day, both as a sociocultural activity and as a factor that improves human health [1]. Primary healthcare organizations such as the World Health Organization (WHO) state that sedentary life affects human health negatively, and regular exercise is the most effective and economical method of protection in preventive medicine in developed and developing countries. Regular exercise is very important in every period of life [2].

It is accepted that adequate and balanced nutrition cannot guarantee the success of an athlete, but bad nutrition causes some health problems and low performance. Energy and nutritional requirements of athletes; The basic nutritional rules are similar for all athletes as it varies according to age, gender and sports branches.

Dietary supplements by DSHEA (Dietary Supplement Health and Education); It has been defined as non-cigarette products containing vitamins, minerals, herbs or amino acids used to support nutrition [4]. Food supplements; It has a wide range of vitamins, minerals, amino acids, essential fatty acids, pulp, various herbs and their extracts.

Today, athletes, whether at the amateur or professional level, turn to nutritional supplements to meet their nutritional needs quickly [6]. The effects of these products that increase physical work and strength and improve physical and mental capacity attract athletes and individuals who want to improve their performance [7].

Based on the estimated health benefits of dietary supplements, their use is widespread without any medical supervision [8]. Therefore, the use of products in the social environment affects individuals. Friends and family are other important factors influencing the use of products, and the media are seen as an important tool for obtaining information about products [9]. Insufficient sources of information about nutritional supplements for exercising individuals and athletes may lead to a lack of awareness [10]. Uncontrolled and unconscious use of dietary supplements can reduce the bioavailability of many nutrients or the effectiveness of other drugs used [11]. Dietary supplements may lead to increased performance, but the right product, the right time and the right amount should be determined and professional help should be sought [12].

The purpose of this research; to determine the prevalence of the use of nutritional supplements in individuals who actively exercise, the purpose of using the products by the individuals and by whom the products are recommended.

MATERIAL AND METHOD

Place, Time and Sampling Selection of the Study

This research is a cross-sectional study. Data were collected through an online questionnaire. The questionnaire form was created over "Google Forms" and delivered to individuals who actively exercise through trainers and dieticians working in gyms, and with their support, it was sent to more participants. The research was conducted between December 2018 and February 2019.

Research sample; It was determined as 349 individuals with %5 margin of error at %95 confidence interval. A total of 468 individuals, 119 of whom are women and 349 of whom are men, actively engaged in sports between the ages of 18-65, participated in the study.

Data Collecting

The data were collected on the internet with a questionnaire consisting of 19 questions prepared by the researcher to determine the frequency of use of food supplements by using the literature review and previous studies on this subject.

The requirement of voluntary consent was specified at the beginning of the questionnaire, and individuals who accepted to participate in the questionnaire started the questionnaire after confirming that they were volunteers electronically. For the survey study, "Ethics Committee Approval" no 101 dated 26.12.2018 was obtained from the **xxxxxxxxxx** Ethics Committee.

Body mass index (BMI); It was calculated by dividing body weight by the square of height in meters [body weight (kg) / height (m²)] and the results were evaluated according to the WHO classification [13].

Statistical analysis

SPSS 21.0 package program was used for statistical evaluation of research data. The frequency (n) and percentage (%) values of the responses of the participants to the questionnaire were calculated. In order to determine whether there is a systematic relationship in the analysis of the two variables, a chi-square test (chi-square) at %95 confidence intervals and %5 significance levels (p <0.05) based on frequency distribution was applied.

**Results**

To research; 119 women (%25.4) with a mean age of 29.45 ± 8.60 years and 349 men (%74.6) individuals with a mean age of 28.15 ± 8.84 years participated. %40.0 of the individuals participating in the research use a food supplement product.

Table 1: Relationship between participants' use of nutritional supplements and gender, age group, body mass index, education level, duration and frequency of exercising

Variables		Use of nutritional supplements				p
		Uses (n=187)		Not using (n=281)		
		n	%	n	%	
Sex	Female	20	10,7	99	35,2	0,000*
	Male	167	89,3	182	64,8	
Age (years)	18-24	80	42,8	103	36,7	0,146
	25-34	66	35,3	113	40,2	
	35-44	34	18,2	43	15,3	
	45 and older	7	3,7	22	7,8	
BMI (kg/m²)	Below 25	92	49,2	160	56,9	0,242
	25-29	78	41,7	97	34,5	
	30 and over	17	9,1	24	8,5	
Level of education	Primary					0,025*
	School-	3	1,6	12	4,3	
	Secondary					
	School	44	23,5	76	27,0	
	High school	117	62,6	140	49,8	
	University	23	12,3	53	18,9	
Doing sports time	Postgraduate					0,000*
	Less than 6 months	18	9,6	104	37,0	
	6 months-1 year	27	14,4	40	14,2	
	1-2 years	27	14,4	22	7,8	
	More than 2 years	115	61,5	115	40,9	

Frequency of doing sports (weekly)	Less than 3 days	23	12,3	77	27,4	0,000*
	3-5 days	101	54,0	144	51,2	
	More than 5 days	63	33,7	60	21,4	

* $p < 0,05$

While it is observed that the younger age group participants use food supplements more, the difference between age groups and the use of nutritional supplements is not significant ($p > 0.05$). There was also no significant difference between BMI groups and using nutritional supplements ($p > 0.05$). However, a statistically significant relationship was found between gender and the use of nutritional supplements, and the use of nutritional supplements was higher in men than in women ($p < 0.05$). Participants with university education have the highest rate of using nutritional supplements ($p < 0.05$). There is also a significant relationship between the use of nutritional supplements and the duration and frequency of exercising ($p < 0.05$) (Table 1).

Table 2: The relationship between the use of food supplements and sports branches of the participants

Sports branches	Use of nutritional supplements				p
	Uses		Not using		
	n	%	n	%	
Fitness/bodybuilding	169	47,6	186	52,4	0,000*
Pilates/aerobics	10	23,3	33	76,7	
Swimming	28	35,9	50	64,1	
Basketball/volleyball/football	21	23,9	67	76,1	
Walking/running	43	27,4	114	72,6	
Bicycle	12	26,7	33	73,3	
Fighting sports	13	68,4	6	31,6	
Powerlifting	8	80,0	2	20,0	
Other	8	36,4	14	63,6	

Note: Participants have marked more than one option.

It is observed that the rate of using nutritional supplements is significantly higher in powerlifting (%80.0), combat sports (%68.4) and fitness / bodybuilding athletes (%47.6) ($p < 0.05$) (Table 2).



Table 3: Participants' frequency of using nutritional supplements and distribution according to the nutritional supplements they use

		n	%
Use of nutritional supplements *	Using a nutritional supplement	187	40,0
	Do not use nutritional supplements	281	60,0
Dietary supplements **	Protein/amino acid powders	159	85,0
	Vitamin/multivitamin/mineral	91	48,6
	Protein/energy bars	52	27,8
	L-Carnitine	33	17,6
	Herbal products	32	17,1
	Creatine	23	12,2
	Energy drinks	17	9,1
	CLA (Conjugated linoleic acid)	16	8,5
	Ginseng	4	2,1
	Other	15	8,0

* $n = 468$, ** $n = 187$, Note: Participants marked more than one nutritional supplement.

It is observed that %40.0 of the participants used a food supplement. The vast majority of 187 participants (%85.0) using dietary supplements use protein / amino acid powders. After protein / amino acid powders, the participants had vitamins / multivitamins / minerals (%48,6), protein / energy bars (%27,8), L-carnitine (%17,6), herbal products (%17,1), creatine (%12, 2), energy drinks (%9,1), CLA (%8,5), ginseng (%2,1) (Table 3).

Table 4: Distribution of the participants according to their opinions on food supplements

		n	%
Reasons to use dietary supplements	Completing nutritional deficiencies	120	64,9
	Increase muscle ratio	111	60,0
	Provide energy	102	55,1
	To be more fit and healthy	64	34,6
	Increase body weight	40	21,6
	Strengthen the immune system	36	19,5
	Reducing body weight	18	9,7
	Other	6	3,2
Benefits from dietary supplements	Muscle ratio increase	135	74,6
	Feeling fitter and healthier	101	55,8
	Weight gain	60	33,1
	Loss of weight	20	11,0
	Other	15	8,3
Opinions on dietary supplements	Useful	183	97,9
	Useless	4	2,1
Seeing side effects	Seeing effect	28	15,0
	Not seeing effect	159	85,0

Note: Participants marked more than one option in the questions about the reasons for using food supplements and the benefits they thought they saw from the nutritional supplements.

%64.9 of the participants using nutritional supplements to complete the deficiencies in nutrition, %60.0 to increase the muscle ratio, %55.1 to provide energy, %34.6 to be fitter and healthier, %21.6 to increase their body weight. %19.5 of them stated that they used nutritional supplements to strengthen the immune system and %9.7 to reduce their body weight. %97.9 of 187 participants using food supplements think that the products they use are beneficial. The majority of the participants (%74.6) think that the muscle ratio has increased, %55.8 of them feel fitter and healthier, %33.1 of them gain weight and %11.0 of them lose weight. While %85.0 of the participants stated that they did not see the side effects of nutritional supplements, %15.0 of them were observed to see the side effects of the products. The most common side effect in participants is acne. They stated that they experienced diarrhea and muscle cramps after acne (Table 4).



Table 5: Distribution of the participants according to the sources they receive suggestions for using nutritional supplements

Recommended Source	n	%
Coach	71	39,9
Media / internet	51	28,7
My family / friends	15	8,4
Doctor	10	5,6
nutritionist	10	5,6
Spice / transfer	1	0,6
Other	20	11,2
Total	178	100,0

9 of the participants who used food supplements did not answer the question and %39.9 of the 178 participants were coaches, %28.7 were media / internet, %8.4 were family or friends, %5.6 were doctors, again %5.6 ' Most of them use dietary supplements with dietitian advice (Table 5).

Discussion

The use of nutritional supplements by athletes has been drawing attention for many years. Food supplements; It is used to maintain or strengthen health, increase energy level, muscle mass, athletic abilities, reduce body fat, prevent / heal injury or disease, or improve nutritional status. The use of these products is widespread among athletes and exercisers who want to meet their needs quickly and effectively [14,15]. In this study, it is seen that %40.0 of the participants used a food supplement. Considering the studies, it can be said that the use of nutritional supplements by athletes in our country is less than in other countries [16-21]. However, the rate of use of nutritional support is quite high in the world and in our country and this rate is gradually increasing.

Almost half of the male individuals in the study use nutritional supplements. The rate of use of nutritional supplements in females is not as high as in males, and a statistically significant relationship was found between the gender factor and the use of nutritional supplements ($p < 0.05$). Generally, it is seen that men use more food supplements than women. Studies show similarities on this issue, but the relationship between the gender factor and the use of nutritional supplements is not significant in each study (16,17,21-25).

Although it is observed that younger individuals use nutritional supplements at a higher rate, this rate is not significant ($p > 0.05$). In general, younger individuals use more nutritional supplements, but we cannot say for sure about the age range that uses dietary supplements most from studies [16,17,26].

A statistically significant relationship was found between the education level of the participants and their use of food supplements ($p < 0.05$). Accordingly, the rate of using nutritional supplements is the highest among university education participants. There are studies showing similarity with this research as well as studies showing contradiction [16,17]. We can say that individuals with university education level use these products more frequently, but individuals with other education levels also have a high rate of nutritional support use.

A statistically significant relationship was found between the type of sports that the participants were interested in and their use of food supplements ($p < 0.05$). Accordingly, the nutritional support products are used by those who do powerlifting, ie weight sports, and this is followed by combat sports and fitness / bodybuilding sports. Considering the studies, it is seen that the rate of using food supplements varies according to sports branches. However, the sports branch that uses nutritional supplements at the highest rate is different in each study [21,24,27].

In this study, the vast majority of participants using dietary supplements stated that they used protein / amino acid powders. After protein / amino acid powders, participants mostly used vitamins / multivitamins / minerals, protein / energy bars, l-carnitine and herbal products. Considering the studies investigating the use of nutritional supplements in individuals who do sports, it is understood that individuals mostly use protein and amino acid supplements and the rate of using these products is quite high. Generally, multivitamin use is also common [16,18,28].

Participants generally use nutritional supplements for reasons such as completing nutritional deficiencies, increasing muscle ratio, and providing energy. When the studies are examined, “completing the nutritional deficiencies, increasing performance, increasing the muscle ratio, strengthening the immune system” can be shown as the most common reasons for the use of nutritional supplements among athletes [17,20,28]. In studies comparing the intended use of food supplements with the supplements used, it is seen that a product type suitable for the purpose is generally used [19,21]. Interestingly, however, Petróczi et al. Reported that the relationship between health protection and vitamin C use was not significant [19]. In order to ensure that individuals use nutritional supplements for their needs, they should be better informed about this issue and use the products under expert control.

In this study, almost all of the individuals (%97.9) who used food supplements thought that the products they used were beneficial. Participants predominantly think that their muscle ratio has



increased and they feel more fit and healthy. When the studies are examined, it is seen that the majority of individuals using nutritional supplements are satisfied with these products. Individuals mainly state that they increase performance and muscle ratio. Individuals who experience side effects from dietary supplements and think that dietary supplements are harmful appear to be very few [18,21,22,29,30-33]. Considering the studies on subjects, it is understood that nutritional supplements may be beneficial, but not as effective as thought [34-38]. We cannot completely ignore the benefits or harms of nutritional supplements, but more long-term studies in human subjects are needed to be able to speak more clearly on this issue. And although individuals state that they do not experience side effects, it should not be forgotten that these products may have side effects like any drug / food, nutritional supplements should be used under expert control and necessary controls should be made.

Considering who recommends the products to the participants who use food supplements, it is seen that they mostly use it with the suggestion of the coach and the media / internet. Looking at the studies, it is seen that individuals receive very little information about nutritional supplements from health professionals. Athletes generally use nutritional supplements with the recommendation of the trainer [18-21,23,25]. Therefore, it is the best way for individuals to consult a sports physician and sports dietician before using nutritional supplements. However, unfortunately, individuals consult very little doctors and dieticians on this issue. This shows that most individuals use food supplements unconsciously. It is seen that the media and the environment are effective in individuals' use of nutritional supplements and they use it as a result of their own research. However, the media can be misleading due to marketing concerns about food supplements and the articles and journals they examine may not be scientific sources. Individuals need to differentiate this well.

As a result, the use of nutritional supplements is very common today and it is obvious how little most people consult experts when using these products. Therefore, the issue of sports nutrition and nutritional supplements is an area where dieticians should have more information and research. Individuals doing sports and athletes should be trained on nutrition and it should be ensured that athletes trust dieticians. Supervisory activities for the sale and use of food supplements need to be increased. If individuals can meet their needs with nutrition, nutritional supplements should not be recommended and the trainer, doctor and dietician should work in cooperation for the health of the athlete. It is thought that longer-term studies on human subjects are needed to talk more clearly about dietary supplements.

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